

# DC-40 with Full HD

## Color Doppler Ultrasound System

Datasheet

Release V02.00.00



# 1 System Overview

## 1.1 Application

- Abdomen
- Obstetrics
- Gynecology
- IVF (In-Vitro Fertilization)
- Cardiology
- Small parts
- Urology
- Vascular
- Pediatrics
- Emergency Medicine
- Nerve
- Others

## 1.2 Transducer types

- Curved array transducer
- Linear array transducer
- Phased array transducer
- 4D Volume transducer

## 1.3 Imaging modes

- B-Mode
- THI and PSH™ (Phase Shift Harmonic Imaging)
- M-Mode/Color M-mode
- Free Xros M™ (Anatomical M-mode)
- Free Xros CM™ (Curved Anatomical M-mode)
- Color Doppler Imaging
- Power Doppler Imaging/Directional PDI
- Pulsed Wave Doppler
- Continuous Wave Doppler
- TDI
- Smart 3D™ (Freehand 3D)
- 4D
- Natural Touch Elastography
- iScape™ View (Panoramic Imaging)
- UWN (Ultra Wideband Non-linear) Contrast Imaging™

## 1.4 Standard features

- B-Mode
- THI and PSH™
- M-Mode
- Color M Mode
- Color Doppler Imaging

- Power Doppler Imaging and Directional PDI
- Pulsed Wave Doppler
- iBeam™ (Spatial Compound Imaging)
- iClear™ (Speckle Suppression Imaging)
- iTouch™ (Auto Image Optimization)
- Zoom/iZoom (Full Screen Zoom)
- FCI (Frequency Compound Imaging)
- B steer
- ExFOV (Extended Field of View)
- Raw data processing
- 4 active universal probe ports, and 1 more for pencil probe only
- 1TB hard drive
- 7 USB ports
- iStorage, iMeasurement, iReport
- MedSight
- iScanHelper
- Smart Installment Reminder
- Smart Track

## 1.5 Optional features

- iScape™ View
- Auto IMT
- UWN Contrast Imaging™
- Natural Touch Elastography
- Continuous Wave Doppler
- ECG
- Free Xros M™
- Free Xros CM™
- TDI (Include TVI, TVD, TVM, TEI)
- TDI QA (TDI Quantitative Analysis)
- Smart 3D™
- Real-time 4D
- iPage™ (Multi-Slice Imaging)
- iLive
- IVF
- Smart OB™ (Auto OB measurement)
- Smart NT™ (Auto NT measurement)
- Smart Face
- Smart V™
- Smart FLC
- DICOM
- Clinical Measurement Package
- Smart Bladder

- Built-in battery
- Gel warmer
- Built-in wireless adapter
- DVD R/W driver

### 1.6 Language support

- Software: English, Chinese, German, Spanish, French, Italian, Portuguese, Russian, Czech, Polish, Turkish, Norwegian, Finnish, Danish, Icelandic, Swedish, Hungarian
- Keyboard input: English, Chinese, German, Spanish, French, Italian, Portuguese, Russian, Czech, Polish, Icelandic, Norwegian, Swedish, Finnish, Turkish, Danish, Hungarian, Serbian
- Control panel overlay: Chinese, Italian, Portuguese, Spanish, German, Russian, French, Czech, Polish
- User manual: English, Chinese

## 2 Physical Specification

### 2.1 Dimension and weight

- Fold (adjustable support arm): 875mm (Depth) x 543mm (Width) x 1200mm (Height)
- Fold (fixed support arm): 810mm (Depth) x 543mm (Width) x 1131mm (Height)
- Unfold (adjustable support arm): 875mm (Depth) x 543mm (Width) x 1655mm (Height)
- Unfold (fixed support arm): 755mm (Depth) x 543mm (Width) x 1500mm (Height)
- Weight: <75 Kg (standard configuration without probes)

### 2.2 Monitor

- High resolution color LED monitor  
Independent tilt up of 110 degrees from horizontal and swivel left/right of -90 to 90 degrees
- Frame rate (Hz): 60Hz
- Digital on-screen display of brightness

and contrast controls

- Viewing angle: 89° left/right; 89° up/down
- Resolution: 1920x1080 (21.5 inch)

### 2.3 Wheels

- Diameter: 100 mm
- Castors (4): total lock and break

### 2.4 Probe port and holder

- Probe ports: 4 active ports, 1 more for pencil probe only
- Detachable probe holder: 7 as standard, including one dedicated holder for endocavity probe (left side holder as default, possible to select it as the right side holder before order); one more dedicated endocavity probe holder as optional

### 2.5 Electrical power

- Voltage: 100-127V~, or 220-240V~
- Frequency: 50/60 Hz
- Power consumption: Max. 600VA
- A/D-converter velocity (MHz): 40 (receiving)

### 2.6 Operating Environment

- Ambient temperature: 10-40 °C
- Relative humidity: 30%-85% (no condensation)
- Atmospheric pressure: 700hPa-1060hPa

### 2.7 Storage & Transportation Environment

- Ambient temperature: -20-55 °C
- Relative humidity: 30%-95% (no condensation)
- Atmospheric pressure: 700hPa-1060hPa

## 3 User Interface

### 3.1 Control panel

- User-centric control panel with home-based layout favors easy access to keys
- Backlit keys ensure accurate work in the dark room
- 6 Programmable keys available for user-defined functions (<P>, <F3-F6>, <F9>)
- 8-segment TGC control

- Full-sized, backlit QWERTY keyboard for text input, function keys and system programming
- Adjustable key volume and trackball speed meet different needs
- Dedicated palm rest design to help reduce user repetitive stress injury
- Independent rotation and up/down of control panel facilitates optimal positioning
  - rotate: 45 degrees (from center)
  - down/up: 140 mm (pull 50 mm range)

### 3.2 Touch screen

- 13.3-inch LED touch screen
- Resolution: 1920\*1080
- Touch screen panel angle adjustable for easy visualization: 30 degrees in rotation
- Digital brightness and contrast adjustment through preset
- Viewing angle: 85 degrees left/right; 85 degrees up/down
- Support thin latex gloves on touch screen.

### 3.3 System boot-up

- Boot-up from complete shut-down in less than 50 sec
- Shut-down in less than 19 sec

### 3.4 Comments

- Supports text input and arrow
- Adjustable text size and arrow size
- Supports home position
- Covers various application
- User customizable

### 3.5 Body marks

- More than 140 bodymarks for versatile application
  - User customizable

### 3.6 Exam mode presets

- 50 system exam modes (unlimited number for user-defined ones)

### 3.7 Screen information\*

- Common info:
  - Mindray logo
  - Hospital name

- Exam date
- Exam time
- Acoustic power
- Mechanical index
- ID, Last name, First Name, Middle initial, Gender, Age
- Probe model
- ECG icon (when ECG connected),
- Operator
- TGC Curve
- Focus position
- Thumbnail
- Imaging parameters
- Help guidance

\*Not all items are listed in this part, detail info please refer to user manual

## 4 Imaging Parameters

### 4.1 Overview

- Echo-enriched Beamforming
- Up to 27648 channels
- 12-beamforming

### 4.2 B-mode

- Display formats: Single(B), Dual(B+B), Quad(4B)
- iClear™: Off; 4 steps
- iBeam™: Off/On
- iTouch™
- iTouch Brightness: -12~12
- FCI
- Frequency (depend on probe)
- B steer: available on linear transducers, 3 levels
- ExFOV: available on convex, linear, and volume transducers
- Depth: 30 levels (0.9-38.8 cm; all depend on transducer )
- Frame rate (max): 1400 f/s
- Acoustic output power: 32 levels
- TGC: 8 pods on control panel
- LGC: 8 segments on touch screen
- Dynamic range: 30-240, 5/step
- Gain: 0-100

- Focus number: 1-4 (depend on transducer)
- Focus position: 16 levels
- FOV: continuously adjustable
- Line density: L, M, H, UH
- Persistence: 0~7, 1/step
- Horizontal Scale: on/off
- L/R flip and U/D flip: on/off
- Rotation: 0, 90, 180, 270
- TSI: general/muscle/fluid/fat
- Gray Map: 25 types
- Tint map: off; 25 types
- Auto merge: on/off
- Middle Line: on, off

#### 4.3 THI and PSH™

- Available on all types of transducer
- Patent PSH™ technology, obtains purer harmonic, better contrast resolution, higher SNR, exceptional high frequency harmonic
- iClear™ available
- Frequency: depends on probe

#### 4.4 M-mode

- Display formats: V2:3, V3:2, H2:3, V3:1, FULL (V: vertical, H: horizontal)
- Color M-mode available
- Acoustic output power: 32 levels
- Dynamic range: 30-240, 5/step
- Gain: 0-100
- M sweep speeds: 6 levels;
- M soften: 0~14, 1/step
- Tint map: off; 25 types
- Gray Map: 25 types
- Edge enhance: 0~3, 1/step

#### 4.5 Free Xros M™ (option)

- Display formats: V2:3, V3:2, H2:3, V3:1 (V: vertical, H: horizontal)
- Color Free Xros M available
- Up to 3 lines
- Display all lines
- Sweep speeds: 6 levels
- M Tint map: off; 25 types
- Gray Map: 25 types

#### 4.6 Free Xros CM™ (option)

- Only available in TDI mode

- Display formats: V2:3, V3:2, H2:3, V3:1 (V: vertical, H: horizontal)
- Sweep speeds: 6 levels
- Tint map: off; 25 types
- Gray Map: 25 types
- Edit, undo, delete function for curved line

#### 4.7 Color Doppler Imaging

- Dual live
- Frequency
- Steer: max. 20 degrees (linear transducer)
- Max frame rate: 356 f/s
- Acoustic output power: 32 levels
- Gain: 0-100
- ROI size/position: adjustable
- Scale: 30 steps, 5 cm/s to 100 cm/s
- Baseline: 16 steps
- Wall filter: 8 steps, 4~9990
- PRF: 0.7 kHz to 14.8 kHz
- Packet size: 0-3, 1/step
- Smooth: 0-4, 1/step
- B/C align: on/off
- Priority: 0-100%, 10%/step
- Color map: 21 types
- Invert: on/off
- Persistence: 0-4, 1/step
- Velocity tag: on/off
- Line density: L, M, H, UH
- Smart Track: on/off

#### 4.8 Power Doppler Imaging

- Dual live
- Support directional power Doppler
- Frequency
- Acoustic output power: 32 levels
- Dynamic range: 10-70, 5/step
- Gain: 0-100
- ROI size/position: adjustable
- Scale: 30 steps
- Wall filter: 8 steps
- PRF: 0.7 kHz to 14.8 kHz
- Packet size: 0-3, 1/step
- Smooth: 0-4, 1/step
- B/C align

- Priority: 0-100%, 10%/step
- Power map: 4 types
- Directional color map: 4 types
- Persistence: 0-4, 1/step
- Line density: L, M, H, UH

#### 4.9 PW/CW-Mode

- Display formats:  
V2:3,V3:2,H2:3,V3:1,FULL(V: vertical, H: horizontal)
- Duplex/Triplex
- Frequency
- Sample volume size: 0.5-20 mm (PW only)
- Sample gate depth: adjustable
- PW Scale: 30 steps, 4.7 cm/s to 369.6 cm/s
- CW Scale: 30 steps, 7.7 cm/s to 6160 cm/s
- Baseline: -4-4, 1/step
- PW Steer: max. 20 degrees (linear transducer)
- Volume: 0-100%, 2%/step
- PW PRF: 0.7 kHz to 24 kHz
- CW PRF: 0.4 kHz to 160 kHz
- Gain: 0-100
- Dynamic range: 24-72, 2/step
- Sweep speed: 6 steps
- Wall filter: 8 steps, PW:20~3300; CW: 11~22000
- Invert: on/off
- Auto invert: on/off
- Angle correction: -89-89 degrees, 1/step
- Quick angle: -60, 0, 60 degrees
- Gray map: 25 types
- Tint map: Off; 25 types
- Time/frequency resolution: 4 steps
- Auto calc: on/off
- Auto calc cycle: 1-5
- Trace area: above, below, all
- iTouch
- Smart Doppler: automatic PW sample line angle adjustment
- HPRF

#### 4.10 TVI/TEI (Tissue Velocity/Energy Imaging, included in TDI option)

- Available on phased array transducer
- Dual live: side by side displays B and B+TVI
- Max frame rate: 356 f/s
- PRF: 0.5 kHz to 9.9 kHz
- Acoustic output power: 32 levels
- Gain: 0-100
- Dynamic range: 10-70, 5/step (TEI only)
- ROI size/position: adjustable
- Scale: 30 steps, 5 cm/s to 100 cm/s (TVI only)
- Baseline: -8-8, 1/step (TVI only)
- Wall filter: 8 steps
- Packet size: 0-3, 1/step
- Smooth: 0-4, 1/step
- B/C align
- Priority: 0-100%, 1%/step
- TVI maps: 10 types
- TEI maps: 8 types
- Invert: on/off (TVI only)
- Persistence: 0-4, 1/step
- Velocity tag (TVI only): on/off
- Line density: L, M, H, UH

#### 4.11 TVD (Tissue Velocity Doppler, included in TDI option)

- Available on phased array transducer only
- Display formats:  
V2:3,V3:2,H2:3,V3:1,FULL(V: vertical, H: horizontal)
- Sample volume size: 0.5-20 mm
- Sample gate depth: adjustable
- Scale: 30 steps, 6.7 cm/s -369.6 cm/s
- Baseline: -4-4, 1/step
- Volume: 0-100%, 2%/step
- PRF: 0.7 kHz to 24 kHz
- Gain: 0-100
- Dynamic range: 24-72, 2/step
- Sweep speed: 6 steps
- Wall filter: 7 steps
- Invert
- Auto invert
- Angle correction: -89-89 degrees,



- 1/step
- Quick angle: -60, 0, 60 degrees
- Gray map: 25 types
- Tint map: Off; 25 types
- Time/frequency resolution: 0-4, 1/step

#### 4.12 TVM (Tissue Velocity Motion, included in TDI option)

- Available on phased array transducer only
- Display formats:  
V2:3,V3:2,H2:3,V3:1,FULL(V: vertical, H: horizontal)
- Dynamic range: 30-240, 5/step
- Gain: 0-100
- M sweep speeds: 6 level
- M soften: 14 steps
- Gray Map: 25 types
- Tint Map: 25 types
- Edge enhancement: 3 steps

#### 4.13 TDI QA

- Dedicated quantification tool for TDI velocity analysis
- Up to 8 of ROI
- Delete all
- Delete current
- ROI tracking: tracking ROI along with cardiac movement
- Std.Height: 1.5-50 mm
- Std.Width: 1.5-50 mm
- Std.Angle: -89-90 degrees
- Export: export current data as CSV format file

#### 4.14 Smart 3D™ (option)

- Smart 3D
  - Acquisition Method: Rocked, Linear
  - iClear
  - VR: on/off, select volume rendered image
  - MPR: on/off, select A, B and C plane
  - Display formats: MPR only /asymmetric
  - VOI: on/off
  - Reset: all, orientation, reset curve
  - Active quadrant: A, B, C, VR

- VR orientation: 0, 90, 180, 270
- Inversion: on/off
- Accept VOI: on/off
- Flip: flip VR
- Sync: synchronize VR with selected plane
- Render modes: Surface, Min, Max, X-ray, iLive
- View direction: down/up, left/right, front/back
- Threshold: 0-100%, 1/step (only on VR)
- Opacity: 0-100%, 5%/step (only on VR)
- Smooth: 20 steps
- Brightness: 0-100%, 2%/step
- Contrast: 0-100%, 2%/step
- Tint: off; 25 types
- Auto rotation
  - Rotation control: play, single loop, loop
  - Direction: left/right, up/down
- Edit:
  - Area selection: inside polygon, outside polygon, inside contour, outside contour, inside rect, outside rect
  - Undo: undo, undo all

#### 4.15 4D (option)

- Available on volume transducer
- Static 3D and 4D
  - 4D frame rate: max. 46.9 vps on D7-2E
  - iClear
  - VR: on/off, select volume rendered image
  - MPR: on/off, select A, B and C plane
  - Display formats: MPR only / asymmetric
  - VOI: on/off
  - Reset: all, orientation, reset curve
  - Active quadrant: A, B, C, VR
  - VR orientation: 0, 90, 180, 270
  - Inversion: on/off
  - Accept VOI: on/off
  - Flip: flip VR

- Sync: synchronize VR with selected plane
- Render modes: Surface, Min, Max, X-ray, iLive
- View direction: down/up, left/right, front/back
- Threshold: 0-100%, 1/step (only on VR)
- Opacity: 0-100%, 5/step (only on VR)
- Smooth: 20 steps
- Brightness: 0-100%, 2%/step
- Contrast: 0-100%, 2%/step
- Tint: off; 25 types
- Face+: Off, 1-3.
- iPage™
  - Slice display mode: Slice only, Slice with MPR
  - Slice cut direction: Horizontal and Vertical
  - Slice layout: 2\*2, 3\*3, 4\*4, 5\*5
  - Active quadrant: A plane, B plane, or C plane
  - Reset: All, Reset Curve, Reset Ori
  - Range Pos: left or right
  - Spacing: 0.5-10 mm, 0.1 mm/step
  - Slice Number: ranging from 3 to max. 25, depends on slice layout.
  - Slice Position: a unique number for current selected slice.
- iLive
  - Shading
  - Light Position: 6
  - Render Modes: iLive
  - Soft View
  - Grad View
- Auto rotation
  - Rotation control: play, single loop, loop
  - Direction: left/right, up/down
- Edit
  - Area selection: inside polygon, outside polygon, inside contour, outside contour, inside rect, outside rect

- Undo: undo, undo all

#### 4.16 Smart Face

- Recognize fetal face automatically and then display the face in a recommended viewing angle
- FaceContact: -15~15
- VR Orientation: 0°, 90°, 180°, 270°

#### 4.17 Smart V™

- Auto 3D volume calculation
- Manual ROI on A, B, C plane separately
- Auto detect contour of target
- Volume result shows in result window
- Edit VOI, Reset Ori
- Active Quadrant: A, B, C, Smart-V

#### 4.18 Smart FLC

- Automatic follicle calculation
- Edit ROI and detect follicle contour automatically
- Undo: Undo, Redo, Undo All
- Active Quadrant: A, B, C, Follicle
- Calc: Off/On
- Edit: Off/On
- Edit: Divide, Merge, Add/Del

#### 4.19 Smart Track

- Available on linear probes for Upper Ext Artery, Upper Ext Vein, Lower Ext Artery, Lower Ext Vein, carotid, IMT, EM Vascular exam.
- Enable the function under Color/Power mode, the angle and the position of the ROI are adjusted automatically.
- Enable the function under B+C+PW mode, the angle and the position of the PW sampling line, SV size, SV angle and SV position are adjusted automatically.

#### 4.20 iScape™ View (option)

- Available on all transducers
- Acquisition method: B and Power
- Supports velocity indicator
- Actual size: on/off
- Fit size: on/off



- Ruler: on/off
  - Tint map: off; 25 types
  - Rotation: 0-355 degrees, 5/step
- 4.21 Elastography (option)**
- Available on L13-3, 7L4B, 7L4A, L12-3E and L14-6NE
  - Available on Thyroid, Breast and MSK modes
  - Stress compensation technology reduces deeper tissue artifacts, obtains more uniform stress throughout whole field
  - Stress indicator: supports frame by frame stress indication
  - Display format: Dual live, Single E
  - Elasto Map: 6 types
  - Smooth: 6 steps
  - Invert: on/off
  - Opacity: 6 steps
- 4.22 UWN Contrast Imaging™\* (option)**
- Ultra Wideband Non-linear (UWN) contrast imaging technology, which provides exceptional contrast agent detecting capability, not only extracts second harmonic, but also non-linear fundamental signals
  - Available on C6-2, 3C5A
  - Available on Adult ABD mode
  - Supports Low MI contrast imaging
  - Timer1: on/off
  - Timer2: on/off
  - Pro capture: captures prospective image less than 480s
  - Retro capture: captures retrospective image less than 120s
  - Dual live: side by side displays tissue image and contrast image
  - Destruct: instantly destroy contrast bubbles
  - iClear: off; 4 steps
  - Mix: mix contrast image with tissue image
  - Mix map: 7 types, available when Mix mode is active
  - Persistence: 8 steps
  - Dynamic range: 30-240, 5/step
  - Gray map: 25 types; inactive when Mix mode is in use
  - Tint map: off; 25 types
  - Supports U/D Flip and L/R Flip
  - Rotation: 90 degrees/step
  - HlmgPos: transpose position of contrast and tissue image
  - Line density: L/M/H/UH
  - DestructAP: 32 levels
  - Destruct time: 500-2000 ms
- 4.23 iBeam™**
- Spatial compound imaging
  - 3 angles maximum
  - Available on all convex and linear transducers
- 4.24 iClear™**
- Speckle suppression imaging
  - Available for B, 3D, 4D
- 4.25 iTouch™**
- Auto image optimization
  - B-mode: gain, TGC
  - Color: gain
  - Power: gain
  - PW: baseline, scale, PRF, WF
- 4.26 B steer**
- Only for linear transducers
- 4.27 ExFov**
- Extended field of view
  - Available for all convex, linear and volume transducers
- 4.28 Zoom**
- Zoom: Spot zoom (write zoom) up to 10x, Pan zoom (read zoom) 0.8-10
  - iZoom: convertible 3 steps; normal image, zoom standard area, zoom only image area
- 4.29 QSave**
- Quick save image parameter setting after image adjustment done
  - Support Save, Save as, Restore
- 4.30 iScanHelper**
- Tutorial function as a guidance to show basic scanning skill with graphic of

probe position, schematic of anatomy and example clinical image

- Support ABD, OB/GYN, Thyroid, Breast and Testicle applications

## 5 Cine Review and Raw Data

### Processing

#### 5.1 Cine review

- Available in all modes
- Frame by frame manual cineloop review or auto playback with variable speed
- Maximum cine memory up to 12394 frames or 181.1 s (M-mode)/169.6s (PW-mode)
- Retrospective and prospective storage are available and length is pre-settable (Max. time 480 s, Max. frames: 192039)
- Maximum 4D cine memory up to 9666 frames or 120s
- Frame compare: displays one cine in dual format and allows frame by frame compare side by side
- Image/cine compare: max 4 for 2D/Color/Power/TDI files compare; max 2 for M/PW/TVD/TVM files compare (compare cines which are saved in same patient file)
- Jump to first and jump to last: one keystroke go to first or last frame in the cine

#### 5.2 Raw data processing

- B-mode:
  - TGC
  - Gain
  - Gray Map
  - Tint Map
  - iClear
  - L/R Flip
  - U/D Flip
  - Rotation
  - LGC
  - Auto Merge

- H Scale
- M-mode:
  - Gray Map
  - Tint Map
- Color:
  - Baseline
  - Smooth
  - Color Map
  - Priority
  - Dual Live
  - Invert
  - Velocity tag
- PW:
  - Gain
  - Baseline
  - Volume
  - Angle
  - Dyn Ra.
  - Gray Map
  - Tint Map
  - Invert
  - Quick Angle
  - Auto Calculate
  - Auto Calc Cycle
  - Auto Calc Parameter
  - Trace Area

## 6 Measurement/Analysis and

### Report\*

#### 6.1 Generic measurements

- 2D-mode
  - Depth
  - Distance
  - Area: Ellipse, Trace, Spline, Cross
  - Trace Length
  - Double Distance
  - Parallel
  - Volume :3-Distance, Ellipse, Ellipse + Distance)
  - Length Ratio
  - Area Ratio
  - IMT
  - B Histogram

- B Profile
  - Volume Flow
  - Color Velocity
  - M-mode
    - Distance
    - Time
    - Slope
    - Heart Rate
    - Velocity
  - Doppler mode
    - D Velocity
    - Time
    - Heart Rate
    - Acceleration
    - D Trace
    - PS/ED
    - Volume Flow
  - Automatic Doppler Spectrum Analysis
    - Heart cycle pre-settable (1, 2, 3, 4, 5)
    - Automatic real-time and retrospective tracing
    - User configurable display of items
    - Support PI, RI, TAMAX, TAMEAN, Volume Flow calculations
    - Appropriate factory setting according to applications
- 6.2 Clinical option measurement package**
- Abdominal
    - Liver
    - Common Hepatic Duct
    - Portal Vein Diameter
    - Gall Bladder: Length, Height, Wall Thickness
    - Common Bile Duct
    - Pancreas: Head, Body, Tail, Duct
    - Spleen
    - Left/Right Kidney: Length, Width, Height, Volume, Cortical Thickness
    - Left/Right Adrenal Gland: Length, Width, Height
    - Abdominal Aorta Diameter
    - Abdominal Aorta Bifurcate Diameter
    - Iliac Diameter
  - Bladder: Length, Width, Height, Volume, micturition volume
  - Common Hepatic Artery
  - Hepatic Artery
  - Portal Vein, Main Portal Vein
  - Hepatic Vein, Left Hepatic Vein, Middle Hepatic Vein, Right Hepatic Vein
  - Splenic Artery
  - Splenic Vein
  - Left/Right Renal Artery, Main Renal Artery, Renal Artery Origin, Arcuate Artery, Segmental Artery, Interlobar Artery, Renal Vein
  - Abdominal Aorta
  - Celiac Axis
  - Superior Mesenteric Artery
  - Inferior Vena Cava
  - Superior Mesenteric Vein
  - Gynecology
    - Cervix: Length, Width, Width
    - Uterus: Length, Width, Height, Volume, Uterus body, Endometrium Thickness
    - UT-L/CX-L
    - Ovary: Length, Width, Height, Volume
    - Follicle: Length, Width, Height, Average Diameter, Volume
  - Obstetrics
    - Early OB: GS, YS, CRL, BPD, FL, NT, Amniotic Fluid
    - 2nd- 3rd Trimester: BPD, HC, OFD, FL, AC, AF, NF, PL Thickness, TAD, APAD, TCD, Cisterna Magna, HW, OOD, IOD, Orbit, HUM, Ulna, RAD, Tibia, FIB, CLAV, Vertebrae, MP, Foot, Ear, APTD, TTD, FTA, THD, HrtC, TC, Umb VD, F-Kidney, Mat Kidney, Cervix L(Trace available)
    - Fetal Heart: LVIDd, LVIDs, LV Diam, LA Diam, RVIDd, RVIDs, RV Diam, RA Diam, IVSd, IVSs, IVS, LV Area, RV Area, RA Area, Ao Diam, MPA Diam, LVOT Diam, RVOT Diam,

- Gestational Age
  - Fetal Growth
  - Fetal Trend Graph
  - Estimated Fetal Weight
  - Multi-gestational Calculations
  - Fetal Biophysical Profile
  - User definable OB tables
  - Z-score
  - Cardiology
    - LV Function: Teichholz, Cube, Gibson, Simpson Single-plane, Simpson Bi-plane, Modified Simpson, Bullet, S-P Ellipse, B-P Ellipse
    - Auto LV: auto measurement in Simpson method
    - LV Mass: Area-Length Method, Truncated-Ellipsoid Method, Cube Method
    - Atrial Volume: LA Vol(A-L), LA Vol(Simpson), RA Vol(Simpson)
    - LVIMP
    - LV TEI, RV TEI
    - Qp/Qs
    - PISA MR, AR, TR, PR
    - MVA(VTI), AVA(VTI)
    - MV medial/lateral (TDI)
  - Urology
    - Prostate: Length, Width, Height, Volume
    - PPSA, PSAD
    - Ureter Diameter
    - Bladder: Length, Width, Height, Volume, micturition volume
    - Left/Right Kidney: Length, Width, Height, Volume, Cortical Thickness
    - Left/Right Adrenal Gland: Length, Width, Height
    - Left/Right Testis: Length, Width, Height
    - Left/Right Seminal Vesicle: Length, Width, Height
  - Vascular
    - Carotid: CCA, ECA, ICA, Bulb, Vert A, Subclav A
    - Upper Extremity Artery: Subclav A, Axill A, Brachial A, Radial A, Ulnar A, Innom A
    - Upper Extremity Vein: Cephalic V, Basilic V, Ulnar V, Radial V
    - Lower Extremity Artery: CFA, SFA, Pop A, TP Trunk A, Peroneal A, P.Tib A, A.Tib A, Dors. Ped A,
    - Lower Extremity Vein: C.Iliac V, Ex.Iliac V, Femoral V, Saph V, Pop V, TP Trunk V, Sural V, Soleal V, Peroneal V, P.Tib V, A.Tib V
    - TCD (Transcranial Doppler): ACA, MCA, PCA, Basilar, A Comb.A, P Comb.A, Vertebral A, Basilar A
  - Small Parts:
    - Thyroid: Length, Height, Width, Volume
    - Isthmus Height
    - Testis: Length, Height, Width
    - Mass: Length, Height, Width, Nip. Distance, Skin Distance
    - Superior Thyroid Artery
    - Inferior Thyroid Artery
  - Orthopedics
    - Hip
    - d/D
- 6.3 Smart bladder**
- Auto trace of bladder border in transverse and vertical section
  - Auto measurement of bladder volume
- 6.4 Report**
- Specific report template by application
  - User-defined report template
  - Editable value in report
  - Images selectable
  - Able to Export as PDF/RTF file
- 6.5 IMT**
- Intima-Media Thickness Measurement
  - Automatic detection of IMT when ROI is set
  - Support CCA, ICA, ECA, Bulb IMT
  - Near wall and far wall detection
  - Angle selectable

- IMT Trend in report
- 6.6 Smart OB™**
- Auto measurement for OB, a special tool for easy OB scan, and greatly reduce time and increase productivity
  - Support BPD, HC, OFD, FL, AC
  - Better get GA before start auto AC
  - Measurement result can be modified by user

**6.7 Smart NT™**

- NT auto measurement
- Auto detection of NT inside ROI

\* Not all measurements are listed in this part; For more detailed information please refer to User Manual

## 7 Exam Storage and Management

**7.1 Exam storage**

- 1TB hard drive. Max 726 GB internal hard drive for patient data storage
- Capable to store up to approximate 330410 single frames
- Direct digital storage of single frame and cine 2D, color and Doppler.

**7.2 Exam management**

- iStation™ workstation dedicated for patient exam management
- Patient exam query/retrieve
- Support review of current and past exam
- New exam, Active exam, Continue exam functions, End exam are available
- Support measurements and calculations on archived exam and images
- Export images as (BMP/JPG/TIFF/DCM/AVI format )
- Support backup/send to USB devices, DVD-RW media

## 8 Connectivity

**8.1 Ethernet Network Connection**

- Cable connection

- Wireless connection: built-in wireless adaptor

**8.2 DICOM 3.0 (option)**

- DICOM basic
  - Verify (SCU, SCP)
  - Print
  - Store
  - Storage Commitment
  - Media Exchange
- DICOM Worklist
- DICOM Query/Retrieve
- DICOM Modality Performed Procedure Step - MPPS
- DICOM OB/GYN structure report
- DICOM Cardiac structure report
- DICOM Vascular structure report
- DICOM Breast Report

**8.3 iStorage (included in UltraAssist)**

- Direct network storage tool between ultrasound system and personal computer

**8.4 MedSight**

- An interactive app that lets you transfer clinical images straight from Mindray Ultrasound system to a smart device, such as mobile phone or tablet PC.
- Needs to be installed on mobile terminal
- Transfer images or clips from system to mobile terminal through WiFi
- Support both iOS (7.0 and above) and Android (4.0 and above) powered system.
- For iOS powered smart device: DICOM is mandatory; For Android powered smart device: DICOM is not necessary

## 9 Transducers

**9.1 Curved array**

- 3C5A
  - Application: Abdomen, OB/GYN, Vascular
  - Bandwidth: 1.3~6 MHz
  - Number of Elements: 128
  - FOV (max): 72°

- Extended FOV: 92°
- Convex Radius: 50 mm
- Depth: 2.8-38.8 cm
- Physical Footprint: 76 mm × 29.5 mm
- Footprint: 62 mm × 16 mm
  - B-mode Frequencies: 1.3~3.2, 1.9~4.6, 2.1~5.3, 2.3~5.7 [2.0, 3.5, 4.5, 5.0] MHz
- Harmonic Frequencies: 5.0, 6.0 MHz
- Doppler Frequencies: 2.5, 3.0 MHz
- Biopsy Guide: NGB-006, multi angle, reusable
- 6C2
  - Application: Pediatric Abdomen, Cardiac, TCI, Nerve, Vascular
  - Bandwidth: 2.6~13.2MHz
  - Number of Elements: 128
  - FOV (max): 102°
  - Extended FOV: 122°
  - Convex Radius: 15 mm
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 33.5 mm × 24.8 mm
  - Footprint: 29 mm × 10 mm
    - B-mode Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2 [5.0, 6.5, 7.5, 8.5] MHz
  - Harmonic Frequencies: 8.0, 9.0 MHz
  - Doppler Frequencies: 4.4, 5.0 MHz
  - Biopsy Guide: NGB-005, multi angle, reusable
- V11-3
  - Application: OB/GYN, Urology
  - Bandwidth: 2.4-12.8 MHz
  - Number of Elements: 128
  - FOV (max): 139°
  - Extended FOV: 159°
  - Convex Radius: 11 mm
  - Depth: 1.8-29.6 cm
  - Physical Footprint: 24.9 mm × 21.8 mm
  - Footprint: 24 mm × 9 mm
  - B-mode Frequencies: 2.4~6.2, 3.2~7.9, 4.0~10.3, 4.7~12.8 [5.0, 6.5, 7.5, 8.5] MHz
- MHz
  - Harmonic Frequencies: 8.0, 9.0 MHz
  - Doppler Frequencies: 4.4, 5.0 MHz
  - Biopsy Guide: NGB-004, single angle, reusable
- V10-4B
  - Application: OB/GYN, Urology
  - Bandwidth: 2.6-13.2MHz
  - Number of Elements: 128
  - FOV (max): 160°
  - Extended FOV: 180°
  - Convex Radius: 10mm
  - Depth: 1.8-29.6 cm
  - Physical Footprint: 22.1mm×21.5mm
  - Footprint: 22.1mm×9.1mm
  - B-mode Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2[5.0, 6.5, 7.5, 8.5]MHz
  - Harmonic Frequencies: 8.0, 9.0 MHz
  - Doppler Frequencies: 4.0, 5.0 MHz
  - Biopsy Guide: NGB-004, single angle, reusable
- V10-4
  - Application: OB/GYN, Urology
  - Bandwidth: 2.6-13.2MHz
  - Number of Elements: 128
  - FOV (max): 160°
  - Extended FOV: 180°
  - Convex Radius: 10mm
  - Depth: 1.8-29.6 cm
  - Physical Footprint: 22.1mm×21.5mm
  - Footprint: 22.1mm×9.1mm
  - B-mode Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2[5.0, 6.5, 7.5, 8.5]MHz
  - Harmonic Frequencies: 8.0, 9.0 MHz
  - Doppler Frequencies: 4.0, 5.0 MHz
  - Biopsy Guide: NGB-004, single angle, reusable
- CB10-4E (Biplane)
  - Application: Urology, OB/GYN
  - Bandwidth: 2.6-11 MHz
  - Number of Elements: 128
  - Field of View (max): 165°
  - Extended FOV: 180°



- Convex Radius: 9mm
- Depth: 1.8-29.6 cm
- Physical Footprint: 22.5 mm × 20.1mm
- Footprint: 20.1 mm × 9.0mm
- B-mode imaging Frequencies: 2.6~6.5, 3.2~7.9, 4.2~11.2, 5.2~13.2\ [5.0, 6.5, 7.5, 8.5] MHz
- Harmonic Frequencies: 8.0, 9.0 MHz
- Doppler Frequencies: 4.7, 5.7 MHz
- Biopsy Guide: NGB-004, single angle, reusable
- C6-2
  - Application: Gynecology, Obstetrics, Abdominal, Vascular
  - Bandwidth: 1.3-5.7MHz
  - Number of Elements: 128
  - FOV (max): 60°
  - Extended FOV: 80°
  - Convex Radius: 60 mm
  - Depth: 2.8~38.8 cm
  - Physical Footprint: 76.5mm x 28mm
  - Footprint: 68mm x 19.2mm
    - B-mode Frequencies: 1.3~3.2, 1.9~4.6, 2.1~5.3, 2.3~5.7 [2.0, 3.5, 4.5, 5.0] MHz
    - Harmonic Frequencies: 5.0, 6.0 MHz
    - Doppler Frequencies: 2.5, 3.0 MHz
    - Biopsy Guide: NGB-022, multi angle, reusable

## 9.2 Linear

- 7L4B/7L4A (II)
  - Application: Abdomen, Pediatric, Small Parts, Musculo-skeletal, Vascular
  - Bandwidth: 3.0~14.0 MHz
  - Number of Elements: 128
  - Field of View (max): 38 mm
  - Steered Angle: +/-6° (B); -20° ~20°, 1°/step (C, PW)
  - Depth: 0.9 -29.6 cm
    - Physical Footprint: 45.7mm x 10.9mm
    - Footprint: 43mm x 10mm
- L14-6NE
  - Application: Small organ, Musculo-skeletal, Nerve, Vascular, Orthopedics, Pediatric
  - Bandwidth: 3.5 ~16 MHz(-20dB)
  - Number of Elements: 192
  - Field of View (max): 38 mm
  - Steered Angle: +/-6° (B); -20° ~20°, 1°/step (C, PW)
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 45.7 mm × 10.9 mm
  - Footprint: 44.2 mm × 8.5 mm
    - B-mode Frequencies: 4.8~10.6, 6.0~12.6, 7.2~14.4, 8.0~16.0[8.0, 10.0, 12.0, 14.0] MHz
    - Harmonic Frequencies: 12.0, 14.0 MHz
    - Doppler Frequencies: 5.7, 6.6 MHz
    - Biopsy Guide: NGB-007, multi angle, reusable
- L12-3E
  - Application: Small parts, Vascular, Musculoskeletal, Nerve, Pediatrics
  - Bandwidth: 3~13.5 MHz
  - Number of Elements: 192
  - Field of View (max): 38 mm
  - Steered Angle: +/-6° (B); -12° ~12°, 1°/step (C, PW)
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 45.7 mm × 10.9 mm
  - Footprint: 44.2 mm × 8.5 mm
    - B-mode Frequencies: 4.4~9.6, 5.4~11.5, 6.0~12.6, 6.6~13.5[5.0, 7.5, 8.5, 10.0] MHz
    - Harmonic Frequencies: 8.0, 10.0 MHz
    - Doppler Frequencies: 5.0, 5.7 MHz

- Biopsy Guide: NGB-007, multi angle, reusable
- L7-3
  - Application: Peripheral Vascular, Thyroid
  - Bandwidth: 2.7-8 MHz
  - Number of Elements: 128
  - Field of View (max): 38mm
  - Steered Angle: +/-6° (B); -12° ~12°, 1°/step (C, PW)
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 45.7mm × 10.9mm
  - Footprint: 43mm × 10mm
    - B-mode imaging Frequencies: 2.7~5.3, 3.2~6.4, 3.6~7.2, 3.8~8.2[4.0, 5.0, 6.0, 7.0] MHz
    - Harmonic Frequencies: 6.0, 7.0 MHz
    - Doppler Frequencies: 3.8, 5.0 MHz
    - Biopsy Guide: NGB-007, multi angle, reusable
- L14-6
  - Application: Small parts, Vascular, Musculoskeletal, Pediatric Abdomen, Nerve
  - Bandwidth: 3.5~16.0MHz (-20dB)
  - Number of Elements: 128
  - Field of View (max): 26mm
  - Steered Angle: +/-6° (B); -20°~20°, 1°/step (C, PW)
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 31.6mm×22.8mm
  - Footprint: 30mm× 8mm
    - B-mode Frequencies: 4.8~10.6, 6.0~12.6, 7.2~14.4, 8.0~16.0[8.0, 10.0, 12.0, 14.0]MHz
    - Harmonic Frequencies: 12.0, 14.0MHz
    - Doppler Frequencies: 5.7, 6.6MHz
    - Biopsy Guide: NGB-016, multi angle, reusable
- 7L5
  - Application: Peripheral Vascular, Breast
  - Bandwidth: 3.0-14 MHz
  - Number of Elements: 128
- Field of View (max): 52.6mm
- Steered Angle: +/-6° (B); -10°~10°, 1°/step (C, PW)
- Depth: 0.9-29.6 cm
- Physical Footprint: 59.1mm × 12mm
- Footprint: 56mm × 10mm
  - B-mode imaging Frequencies: 3.0~9.2, 5.4~11.5, 6.2~13.0, 7.0~14.0[5.0, 7.5, 8.5, 10.0]MHz
  - Harmonic Frequencies: 8.0, 10.0 MHz
  - Doppler Frequencies: 5.0, 5.7 MHz
  - Biopsy Guide: NGB-007, multi angle, reusable
- L13-3
  - Application: Musculoskeletal, nerve, small parts, vascular, pediatric, abdominal Abdomen, Nerve
  - Bandwidth: 3.0~14.0MHz
  - Number of Elements: 128
  - Field of View (max): 38mm
  - Steered Angle: +/-6° (B); -20°~20°, 1°/step (C, PW)
  - Depth: 0.9-29.6 cm
  - Physical Footprint: 45.7mm x 10.9mm
  - Footprint: 44.2mm x 8.5mm
    - B-mode Frequencies: 3.0~9.2, 5.4~11.5, 6.2~13, 7.0~14.0 [5.5, 6.5, 7.5, 9.0]MHz
    - Harmonic Frequencies: 9.0, 10.0MHz
    - Doppler Frequencies: 5.0, 6.2MHz
    - Biopsy Guide: NGB-007, multi angle, reusable
- 6LB7
  - Application: Urology
  - Bandwidth: 2.6-13.2MHz
  - Number of Elements: 128
  - Field of View (max): 66mm ( L); 152° (C)
  - Steered Angle: +/-6° (B); -6°~6°, 1°/step (C, PW) (L)
  - Extended FOV: 172° (C)
  - Depth: 1.8~29.6 cm
    - Physical Footprint: 20.6mm x 20.6mm (L); 21.9mm x 21.9mm (C)

- Footprint: 72mm x 11mm (L);  
21.92mm x 11.2mm (C)
- B-mode Frequencies: 2.6~6.5, 3.2~7.9,  
4.2~11.2, 5.2~13.2 [5.0, 6.5, 7.5,  
8.5]MHz
- Harmonic Frequencies: 8.0, 9.0MHz
- Doppler Frequencies: 4.0, 5.0MHz (C);  
4.4, 5.3MHz (L)
- Biopsy Guide: NGB-009, multi angle,  
reusable

### 9.3 Phased array

- P4-2
  - Application: Cardiac, Abdominal,  
Pediatric, Transcranial
  - Bandwidth: 1.0~5.2MHz
  - Number of Elements: 64
  - Field of View (max): 90°
  - Depth: 2.8-31.4 cm
  - Physical Footprint: 25.2 mm × 20.6  
mm
  - Footprint: 23.4 mm × 15.2 mm
    - B-mode Frequencies: 1.0~2.6,  
1.3~3.2, 1.6~3.8, 2.2~5.2[2.0, 2.5, 3.0,  
4.0 ]MHz
    - Harmonic Frequencies: 3.4, 3.8 MHz
    - Doppler Frequencies: 2.0, 2.3 MHz; TDI  
2.0, 2.3 MHz
    - CW Frequency: 2.0 MHz
    - Biopsy Guide: NGB-011, multi angle,  
reusable
- P7-3
  - Application: Cardiac, Abdominal,  
Cephalic, Pediatric
  - Bandwidth: 2~8.2 MHz
  - Number of Elements: 96
  - Field of View (max): 90°
  - Depth: 2.8-27.7 cm
  - Physical Footprint: 34 mm × 24.5 mm
  - Footprint: 21 mm × 13.8 mm
    - B-mode Frequencies: 2.1~5.4,  
2.8~6.4, 3.3~7.2, 3.8~8.2[3.6, 5.0, 6.0,  
7.0] MHz
    - Harmonic Frequencies: 6.0, 7.0 MHz

- Doppler Frequencies: 3.3, 4.0 MHz; TDI  
3.3, 4.0 MHz
- CW Frequency: 3.3 MHz
- Biopsy Guide: not available
- P10-4E
  - Application: Cardiac, abdominal,  
Pediatric, nerve
    - Bandwidth: 3.0-11.8 MHz
    - Number of Elements: 128
  - Field of View (max): 90°
    - Depth: 2.8~27.7 cm
    - Physical Footprint: 15.1 mm x  
10.2mm
    - Footprint: 15mm x 9.1mm
    - B-mode Frequencies: 3.0~9.2,  
3.6~10.2, 4.4~11.0, 5.0~11.8 [5.5, 6.5,  
7.5, 8.5] MHz
    - Harmonic Frequencies: 7.0, 8.0 MHz
    - Doppler Frequencies: 5.0, 5.7 MHz; TDI  
5.0, 5.7 MHz
    - CW Frequency: 5.0 MHz
    - Biopsy Guide: not available

### 9.4 Volume curved array

- D7-2E
  - Application: OB/GYN, Abdomen
  - Bandwidth: 2.0-8.4 MHz
  - Number of Elements: 128
  - FOV (max): 70°(B) × 70°(sweep)
  - Extended FOV: 90°(B)
  - Convex Radius: 40 mm
  - Volume Sweep Radius: 21 mm
  - Depth: 2.8~38.8 cm
  - Physical Footprint: 68.4 mm × 45 mm
  - Footprint: 49 mm × 14.1 mm
    - B-mode Frequencies: 2.0~4.4, 3.6~6.4,  
3.7~7.2, 4.8~8.4 [2.5, 4.0, 4.5, 6.0] MHz
    - Harmonic Frequencies: 5.0, 6.0 MHz
    - Doppler Frequencies: 2.5, 3.0 MHz
    - Biopsy Guide: not available
- D7-2
  - Application: Obstetrics, gynecology,  
abdominal
  - Bandwidth: 2.0-8.4 MHz

- Number of Elements: 128
- FOV (max): 70°(B) × 70°(sweep)
- Extended FOV: 90°(B)
- Convex Radius: 40 mm
- Volume Sweep Radius: 21 mm
- Depth: 2.8~38.8 cm
- Physical Footprint: 74mm x49mm
- Footprint: 49mm x 14.15mm
- B-mode Frequencies: 2.0~4.4, 3.6~6.4, 3.7~7.2, 4.8~8.4 [2.5, 4.0, 4.5, 6.0] MHz
- Harmonic Frequencies: 5.0, 6.0 MHz
- Doppler Frequencies: 2.5, 3.0 MHz
- Biopsy Guide: not available
- DE11-3E
- Application: Gynecology, obstetrics, urology
- Bandwidth: 2.3-11.6 MHz
- Number of Elements: 128
- FOV (max): 149°
- Extended FOV: 169°
- Convex Radius: 11 mm
- Volume Sweep Radius: 11.06 mm
- Depth: 1.8~29.6 cm
- Physical Footprint: 24.9mm x 21.8mm
- Footprint: 24mm x 9mm
- B-mode Frequencies: 2.3~5.8, 2.9~7.2, 3.2~7.9, 4.4~11.6 [5.0, 6.0, 6.5, 8.0] MHz
- Harmonic Frequencies: 8.0, 9.0 MHz
- Doppler Frequencies: 4.0, 5.0 MHz
- Biopsy Guide: NGB-027, multi-angle, reusable

### 9.5 Pencil

- CW5s
  - Application: Vascular
  - Number of Elements: 2
  - CW Frequency: 5.0 MHz
  - Biopsy Guide: not available

## 10 Peripheral Devices and

### Accessories (Option)

#### 10.1 Digital Color Video Printer

- SONY UP-D25MD

#### 10.2 Graph/text printer

- HP Deskjet Ink Advantage 2020hc,
- HP Officejet Pro 8100

#### 10.3 Analog Black and White Video Printer

- MITSUBISHI P93W-Z,
- SONY UP-X898MD

#### 10.4 External DVR

- SONY HVO 550MD

#### 10.5 Microphone

- SOMIC

#### 10.6 Gel warmer

- Easily be disassembled off system for cleaning
- Light indicator for temperature protecting
- Switch: off, 37°C, 40°C
- Dimension: 80mm (W) × 85 mm (D) × 150mm (H) (145mm in depth)
- Weight: approx. 500g

#### 10.7 Footswitch

- USB port: 971-SWNOM (2-pedal)
- USB port: 971-SWNOM (3-pedal)
- FS-81-SP-2 (1-pedal)
- Support User-definable functions (Freeze, Save, Print)

#### 10.8 ECG

- 6-pin, AHA/IEC, for 3-lead wires
- ECG wave display: on/off
- Gain: 0-30
- Sweep speed: 1-6, 1/step

#### 10.9 Barcode reader

- Laser barcode scanner
- Model: SYMBOL LS2208

#### 10.10 Built-in Wireless adapter

- Encryption: WEP, WPA-PSK, WPA2-PSK
- Max transfer speed: 300Mbps
- Protocols: 802.11b: 11,5.5,2,1 Mbps;  
802.11g: 54,48,36,24,18,12,9,6 Mbps;  
802.11n: up to 300Mbps

#### 10.11 Built-in Battery

- Replaceable and rechargeable lithium battery
- Restore from standby mode: minimum 15s
- Full battery lasts more than 24h in

- standby mode
- Light indicator for standby mode
- Empty battery recharged to full in less than 4h
- Continuous work time: about 1 hour and 13 minutes in B mode
- Li-ion 14.8V 6600mAh LI23I002A
- $14.8V * 6.6Ah < 100Wh$

code of the EU-notified body that certified meeting the requirements of Annex II excluding (4). of the Directive.

## 11 System Inputs and Outputs

### 11.1 Video/Audio input

- Microphone: 1 port
- Audio signal: 2 port

### 11.2 Video/Audio output

- S-Video out: 1 port, PAL/NTSC
- Video out: 1 port
- VGA out: 1 port
- DVI out: 1 port
- Audio out: 2 ports

### 11.3 Physio input

- Support ECG signal
- ECG: 1 port

### 11.4 Other input/output

- USB: 7 USB ports, including 1 dedicated USB port for printer
- Ethernet: 1 port
- Remote control: 1 port

## 12 Safety and Conformance

### 12.1 Quality standards

- ISO 9001
- ISO 13485

### 12.2 Design standards

- EN 60601-1 and IEC 60601-1
- EN 60601-1-2 and IEC 60601-1-2
- EN 60601-1-6 and IEC 60601-1-6
- EN 60601-2-37 and IEC60601-2-37
- EN 62304 and IEC 62304
- EN 62366 and IEC 62366
- EN ISO 17664 and ISO 17664

### 12.3 CE declaration

This system is fully in conformance with the Council Directive 93/42/EEC Concerning Medical Devices. The number adjacent to the CE marking (0123) is the

**NOTICE:**

**Not all features or specifications described in this document may be available in all**

**probes and/or modes.**

**Mindray reserves the right to make changes in specifications and features shown herein, or discontinue the product at any time without notice or obligation. Contact Mindray Representative for the most current information**